

New River Basin

The New River Basin is located in southwest Virginia and covers 3,070 square miles or approximately 8 percent of the Commonwealth's total land area. The New River flows from its headwaters in Watauga County, North Carolina in a northeasterly direction to Radford, Virginia and then in a northwesterly direction to Glen Lyn, where it exits into West Virginia. There it flows to the confluence of the Gauley River forming the Kanawha River, a tributary to the Ohio River.

The New River Basin in Virginia is defined by both hydrologic and political boundaries. It is bordered by the James River Basin and Roanoke River Basin to the east, and the Big Sandy River Basin and Tennessee River Basin to the west. The southern boundary of the Virginia portion is the North Carolina State line and its northwest boundary is the West Virginia State line.

The New River Basin runs 115 miles in length from Blowing Rock, North Carolina to Bluestone Dam near Hinton, West Virginia with a maximum width of 70 miles near Rural Retreat Virginia. The Virginia portion of the New River Basin is 87 miles in length.

The topography of the New River Basin is generally rugged, the upper reaches of its tributaries being extremely steep. High mountains, narrow valleys and steep ravines characterize the basin. There are ten tributaries in the Upper New River Basin each having more than 100 square miles in drainage area and many others with forty or more square miles.

The New River Basin is the least densely populated of the Commonwealth's major river basins. The higher elevations of the basin have steep slopes and are thickly forested, while the mountain bases are mostly used for agriculture. Approximately 59 percent of its land is forested. Cropland and pasture make up another 35 percent, with approximately 3 percent considered urban.

The 1994 population for the New River Basin was approximately 211,673. All or portions of the following 11 counties lie within the basin: Grayson, Carroll, Smyth, Wythe, Pulaski, Floyd, Montgomery, Tazewell, Bland, Giles, and Craig and the cities of Galax and Radford.

The climate of the New River Basin is determined by the geographical location of the basin on the North American Continent, its latitude, its proximity to the Atlantic Ocean and its topography. The average annual temperature is 53°F ranging from a high of 55°F at Glen Lyn to a low of 50°F at Burkes Garden. Extremes of -27°F to 103°F have been recorded. Average annual precipitation is approximately 40 inches. This varies from 36 inches in the central part of the basin to 45 inches in the western, eastern and southern portions. The average annual snowfall is 22 inches ranging from 20 inches in the central and eastern portions to 30 or more inches in the higher elevations.

The New River Basin is divided into two USGS hydrologic units as follows: HUC 05050001 - Upper New; and HUC 05050002 - Middle New. The two hydrologic units are further divided into 35 waterbodies or watersheds.

Basin assessment information is presented in Tables 2.6-9-1, 2.6-9-2, 2.6-9-3.

TABLE 2.6-9-1

NEW RIVER BASIN INDIVIDUAL USE SUPPORT SUMMARY TABLE

Total Size Monitored:

Basin Size

Rivers - 2,301.82 miles
 Lakes - 4,798.50 acres
 Estuaries - 0 sq. miles

Rivers - 4,099 miles
 Lakes - 5,218 acres
 Estuaries - 0 sq. miles

Use	Water Body Type	Size Fully Supporting	Size Fully Supporting but Threatened	Size Partially Supporting	Size Not Supporting	Total Size Assessed
Aquatic Life	River	1,107.56	1399.31	34.94	7.25	2549.06
	Lake	153.50	4,645.00	0	0	4798.5
	Estuary	-	-	-	-	0
Fish Consumption	River	4,098.54	0	0	0	4098.54
	Lake	4,798.50	0	0	0	4798.5
	Estuary	-	-	-	-	0
Shellfishing	River	-	-	-	-	0
	Lake	-	-	-	-	0
	Estuary	-	-	-	-	0
Swimming	River	469.04	52.89	10.96	31.95	564.84
	Lake	4,798.50	0	0	0	4798.5
	Estuary	-	-	-	-	0
Drinking Water	River	80.00	0	0	0	80
	Lake	4,685.50	0	0	0	4685.5
	Estuary	-	-	-	-	0

TABLE 2.6-9-2 SIZE OF WATERS IMPAIRED BY VARIOUS CAUSE CATEGORIES IN NEW BASIN

Cause of Impairment	Type	Major impact	Moderate/ Minor Impact
General Standards (Benthic)	River (mi)	0	26.16
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Unknown Toxicity	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Pesticides	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Priority Organics	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Metals	River (mi)	0	0.60
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
pH	River (mi)	0	8.10
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Siltation	River (mi)	4.41	6.05
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Organic Enrichment/Low D.O.	River (mi)	2.84	0
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Thermal Modification	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Pathogen Indicators	River (mi)	31.95	10.96
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Habitat Alterations	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Suspended Solids	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0

TABLE 2.6-9-3 SIZE OF WATERS IMPAIRED BY VARIOUS SOURCE CATEGORIES IN NEW BASIN

Source of Impairment	Type	Major impact	Moderate/ Minor Impact
Industrial Point Sources	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Municipal Point Sources	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Combined Sewer Overflow	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Agriculture	River (mi)	29.11	2.13
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Silviculture	River (mi)	0	2.13
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Urban Runoff/Storm Sewers	River (mi)	0	30.83
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Resource Extraction	River (mi)	0	8.10
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Land Disposal	River (mi)	2.84	0
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Natural Sources	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Source Unknown	River (mi)	2.84	6.89
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Habitat Modification	River (mi)	4.41	6.05
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
VDH Fish Consumption Advisory	River (mi)	0	0
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0
Collection System Failure	River (mi)	2.84	0
	Lakes (acres)	0	0
	Estuary (mi ²)	0	0

New River Basin
Appendix B for the 1998 305(b) and 303(d) Reports

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New River Basin
Appendix B for the 1998 305(b) and 303(d) Reports

REGION	MONITORING STATIONS		CONVENTIONAL WATER COLUMN MONITORING DATA								OTHER MONITORING DATA										SEDIMENT				FISH TISSUE.				BIO MON	TYPE BIOL STN	COMMENTS
	IDENTIFICATION NUMBER	TYPE	TEMP	RESUL T	D.O.	pH	TOTAL	PHOS	RESUL T	CHLOR	RESUL T	COLIF	BACT	#b	#c	#d	#e	#f	#g												
S-N31R	9-HCC001.40	B	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	MI	net										
S-N32R	9-WFC016.45	A	0 / 29	S	0 / 29	S	0 / 29	S	0 / 28	S	0 / 0	W	0 / 20	S			0	S	0	S	SI	net									
S-N33R	9-LAC000.92	B	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	MI	net										
S-N36R	9-BST023.05	A,B	0 / 57	S	0 / 57	S	0 / 56	S	10 / 55	T	0 / 0	W	6 / 32	P			0	S	0	S	VI	net									
S-N36R	9-BST029.57	A	0 / 20	S	0 / 20	S	0 / 19	S	0 / 18	S	0 / 0	W	2 / 13	T			0	S	0	S											
S-N37R	9-LRR001.39	B	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/												
S-N37R	9-LRR002.19	A	0 / 26	S	11 / 28	N	0 / 25	S	2 / 24	S	0 / 0	W	6 / 20	N			5,2,1	T	0	S											
W-N14R	9-RIC000.50	A	0 / 28	S	0 / 28	S	0 / 28	S	1 / 19	S	0 / 0		2 / 15	T			0	S	0	S			Pb,Zn,Sb,Be,Cd,Cr,Cu,Ni,Th Sb in sed.								
W-N15R	9-LRI001.62	A	0 / 4	J	0 / 4	J	0 / 4	J	0 / 4	J	0 / 0		0 / 3	J			0	S	0	S			Zn in sed.								
W-N15R	9-LRI000.40	A	0 / 24	S	0 / 24	S	0 / 24	S	1 / 16	S	0 / 0		2 / 14	T			0	S	0	S			Zn in sed.								
W-N16R	9-NEW098.32	A	0 / 64	S	3 / 64	S	0 / 64	S	0 / 64	S	0 / 0		4 / 61	S			0	S	0	S			AQM Stream Sta. Sb & Zn in sed.								
W-N16R	9-NEW107.51	A	0 / 43	S	0 / 43	S	0 / 42	S	0 / 39	S	0 / 0		3 / 23	S			0	S	0	S			Pb, Sb & Zn in sed. Nut. Enrh. P								
W-N16R	9-NEW106.83	A	0 / 12	J	0 / 12	J	0 / 12	J	0 / 0	W	0 / 0		3 / 12	J			0	S	0	S			Pb, Sb & Zn in sed. Nut. Enrh. P								
W-N17R	9-PKC011.11	A,B	0 / 19	S	0 / 19	S	0 / 19	S	0 / 0	W	0 / 0		1 / 17	S			0	S	0	S	NI	REF	Pb & Zn in sed.								
W-N17R	9-PKC009.29	A,B	0 / 19	S	0 / 19	S	1 / 19	S	0 / 0	W	0 / 0		3 / 18	T			0	S	0	S	MI	IMP	Zn in sed.								
W-N17R	9-PKC007.82	A,B	0 / 7	J	0 / 7	J	0 / 7	J	0 / 0	W	0 / 0		2 / 6	J			0	S	0	S	MI	IMP	Cu, Pb, Se, & Zn in sed.								
W-N17R	9-PKC004.65	A	0 / 62	S	0 / 62	S	0 / 62	S	0 / 59	S	0 / 0		5 / 58	S			0	S	0	S											
W-N18R	9-NEW081.72	A	0 / 61	S	0 / 61	S	0 / 61	S	0 / 59	S	0 / 0		7 / 57	S			0	S	0	S			Sb, Zn & Pb in sed.								
W-N18R	9-NEW077.36	SS	0 / 0		0 / 0		0 / 0		0 / 0		0 / 0		0 / 0				0	S	0	S			Cd, Pb & Zn in sed.								
W-N18R	9-CBC006.35	A,B	0 / 60	S	0 / 60	S	0 / 60	S	0 / 58	S	0 / 0		21 / 56	N			0	S	0	S	MI	IMP	Urban NPS								
W-N18R	9-CBC004.38	A,B	0 / 60	S	0 / 60	S	0 / 60	S	56 / 58	T	0 / 0		15 / 56	P			0	S	0	S	VI	IMP	Urban/Ag. NPS								
W-N18R	9-CBC001.00	B	0 / 0		0 / 0		0 / 0		0 / 0		0 / 0		0 / 0				0	S	0	S	VI	IMP	Urban/Ag. NPS								
W-N19R	9-LRV059.33	A	0 / 3	J	0 / 3	J	0 / 3	J	0 / 0	W	0 / 0		0 / 3	J			0	S	0	S											
W-N20R	9-DDD004.64	A	3 / 20	T*	0 / 20	S	0 / 20	S	0 / 0	W	0 / 0		5 / 18	P			0	S	0	S			Natural Conditions								
W-N20R	9-DDD002.62	A	2 / 8	J	0 / 8	J	0 / 8	J	0 / 0	W	0 / 0		1 / 6	J			0	S	0	S											
W-N21R	9-MLC005.44	A	0 / 19	S	0 / 19	S	0 / 19	S	0 / 0	W	0 / 0		11 / 18	N			0	S	0	S			Abv. Riner STP Ti in sed.								
W-N21R	9-MLC002.59	A	0 / 7	J	0 / 7	J	0 / 7	J	0 / 0	W	0 / 0		3 / 6	T			0	S	0	S			Below Riner STP								
W-N21R	9-LRV000.34	A	0 / 19	S	0 / 19	S	0 / 19	S	0 / 0	W	0 / 0		2 / 18	T			0	S	0	S											
W-N22R	9-STE006.69	B	0 / 0		0 / 0		0 / 0		0 / 0		0 / 0		0 / 0				0	S	0	S	MI	IMP	Urban/Ag. NPS								
W-N22R	9-STE002.41	A	0 / 19	S	0 / 19	S	2 / 19	T*	0 / 0	W	0 / 0		1 / 18	S			0	S	0	S			Natural Conditions								
W-N22R	9-BCK009.47	A	0 / 18	S	0 / 18	S	0 / 17	S	0 / 0	W	0 / 0		14 / 16	N			0	S	0	S											
W-N23R	9-SNK012.06	A,B	2 / 9	J	0 / 9	J	0 / 9	J	0 / 0	W	0 / 0		0 / 8	J			0	S	0	S	NI	REF									
W-N23R	9-SNK005.38	A	2 / 9	J	0 / 9	J	0 / 9	J	0 / 0	W	0 / 0		1 / 9	J			0	S	0	S											
W-N23R	9-NEW057.83	SS	0 / 0		0 / 0		0 / 0		0 / 0		0 / 0		0 / 0				0	S	0	S			Zn in sed.								
W-N23R	9-NEW056.22	A	0 / 61	S	0 / 61	S	1 / 61	S	0 / 59	S	0 / 0		1 / 57	S			0	S	0	S			Pb & Zn in sed.								
W-N24R	9-LRY000.28	A	1 / 4	J	0 / 4	J	0 / 4	J	0 / 0	W	0 / 0		1 / 4	J			0	S	0	S											
W-N25R	9-WLK004.34	A	0 / 20	S	0 / 20	S	0 / 20	S	0 / 0	W	0 / 0		0 / 19	S			0	S	0	S											
W-N27R	9-LWK000.77	A	1 / 13	S	0 / 13	S	0 / 13	S	0 / 1	W	0 / 0		2 / 13	T			0	S	0	S			Ext. Prd. Temp DO pH; ok								
W-N28R	9-SNC005.04	B	0 / 0		0 / 0		0 / 0		0 / 0		0 / 0		0 / 0				0	S	0	S	NI	REF									
W-N28R	9-SNC002.88	B	0 / 0		0 / 0		0 / 0		0 / 0		0 / 0		0 / 0				0	S	0	S	NI	REF									
W-N28R	9-SNC000.20	A,B	0 / 14	S	0 / 14	S	0 / 14	S	0 / 0	W	0 / 0		0 / 14	S			0	S	0	S	SI	IMP	Pb & Ni in sed.								
W-N29R	9-NEW040.97	SS	0 / 0		0 / 0		0 / 0		0 / 0		0 / 0		0 / 0				0	S	0	S			Zn in sed.								
W-N29R	9-NEW033.36	SS	0 / 0		0 / 0		0 / 0		0 / 0		0 / 0		0 / 0				0	S	0	S			Pb & Zn in sed.								
W-N29R	9-NEW030.15	A	2 / 61	S	0 / 61	S	0 / 61	S	0 / 58	S	0 / 0		2 / 58	S			0	S	0	S			Zn in sed.								
W-N32R	9-WFC000.20	A	0 / 22	S	0 / 22	S	0 / 22	S	0 / 0	W	0 / 0		2 / 19	T			0	S	0	S			Ni in sed.								
W-N34R	9-RHC000.08	A	0 / 4	J	0 / 4	J	0 / 4	J	0 / 0	W	0 / 0		1 / 4	J			0	S	0	S											
W-N35R	9-ADR000.13	A	0 / 4	J	0 / 4	J	0 / 4	J	0 / 0	W	0 / 0		0 / 4	J			0	S	0	S											